PURPOSE: This specification defines the requirements for preassembly screening and demonstration tests for electronic piece parts of the types indicated in the title below. These tests are supported by the requirements of JPL Specification ZPP-2073-GEN.

1. Screening Tests. These test shall be conducted in the following order except as noted.

   a. Premeasurement visual and dimensional inspection: Per JPL Specification ZPP-2073-GEN and JPL drawing 10146845. Serialize the devices and record their date codes.

   b. Initial Measurements: (at room ambient temperature)

      1) Dielectric withstanding voltage: 500 V rms, 60 Hz, applied for 60±5 seconds between the windings and the case, in accordance with MIL-STD-202, Method 301.

      2) Insulation resistance: The insulation resistance of the inductor shall be measured by applying 500 Vdc for 60 ±5 seconds between the winding and the case.

      3) DC resistance: (see Table I).

      4) Inductance: Measure inductance at 1 kHz using an inductance bridge. (see Table I)

      5) Polarity: The polarity shall be as shown in JPL drawing 10146845. (non-measurement)

   c. Thermal Shock Test: Perform ten (10) cycles per MIL-STD-202, Method 107D except that the temperature range shall be from -20°C to +85°C. The dwell time at 25°C shall be five minutes maximum. The winding continuity shall be continuously monitored during thermal cycling as shown in Figure 1. Maximum current shall be 50 µAdc.

   d. Second measurements: Repeat measurements b.2) Insulation resistance, b.3) DC resistance, and b.4) Inductance.

   e. Operational burn-in: Parts shall be operated continuously under the conditions shown in Figure 2 for 168 +8/-0 hours at a temperature of +85°C. Voltage and temperature shall be monitored by a technician who shall record all anomalies and corrections.

   f. Final measurements: Repeat initial measurements and record.

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REVISION: A APPROVED BY:		DATE: 05-19-92	
APPROVED SOURCE(S)			ONLY THE ITEM LISTED IN THE APPROVED SOURCE BLOCK AND IDENTIFIED BY VENDOR NAME, ADDRESS, AND PART NUMBER HAS BEEN EVALUATED AND APPROVED BY THE JET PROPULSION LABORATORY OR ITS DELEGATED ALTERNATE. A SUBSTITUTE ITEM SHALL NOT BE USED WITHOUT PRIOR EVALUATION AND APPROVAL BY JPL OR ITS DELEGATED ALTERNATE
VENDOR PART NO	VENDOR	JPL PART NO	

JET PROPULSION LABORATORY CALIFORNIA INSTITUTE OF TECHNOLOGY

Procurement specification: JPL drawing 10146845 Screening specification: ZPP-2073-GEN	TITLE: Test Specification Power Converter Inductors: 10146845 - L4, L6 WFPC II - AFM	JPL CAGE NO 23835 ST 12177
Custodian: Electronic Parts Reliability Section 514		SHEET 1 OF 3

FILE: (Sec.514): F:\USERS\514\SPECS\ACT-DETL\ST12177.A

g. Device acceptance criteria shall be as follows:

1) DC coil resistance shall remain within the tolerance limits shown in Table I.

2) Inductance shall remain within tolerance limits shown in Table I.

3) Insulation Resistance shall be 10,000 megohms minimum.

4) The winding shall exhibit no discontinuities during thermal cycling.

5) Second measurements: Percent change from initial measurement shall not exceed the amount specified in Table I.

6) Final measurements: Percent change from initial measurement shall not exceed the amount specified in Table I.

7) Dielectric withstanding voltage test shall cause no evidence of arcing, flashover, breakdown of insulation, or damage.

2. Demonstration Tests. Demonstration tests are waived for the WFPC II Articulating Folding Mirror (AFM) electronic parts, including magnetic devices (reference IOM 700/RLH - AFM Compliance Matrix). Subsequently, this section does not apply to the devices indicated in the title of this specification.

TABLE I. Electrical Characteristics

Parameter	Limits	Maximum Deviation From Initial Measurement	
		Second Measurement	Final Measurement
Dielectric strength	No breakdown or arcing		No breakdown or arcing
Insulation Resistance	10 k megohms minimum	10 k megohms minimum	10 k megohms minimum
DC Resistance	5.5 Ω maximum	±5%	±5%
Inductance	10 mH minimum	±10%	±10%

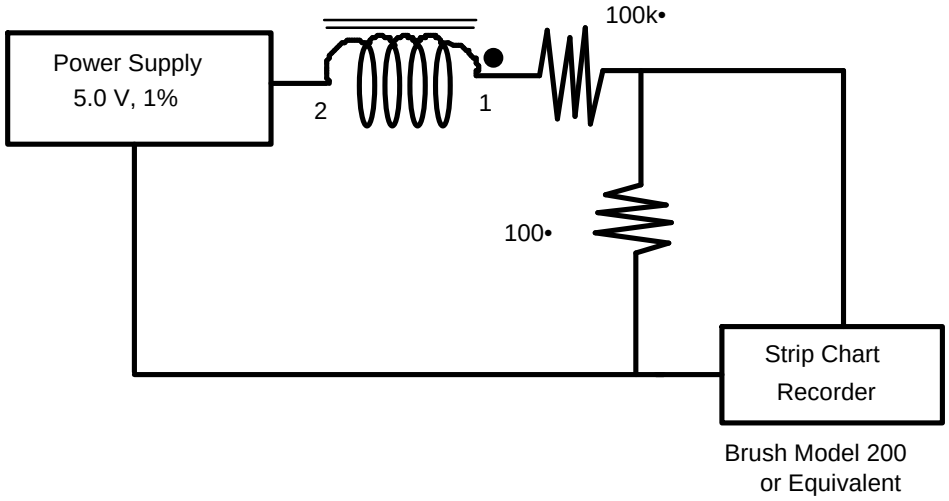
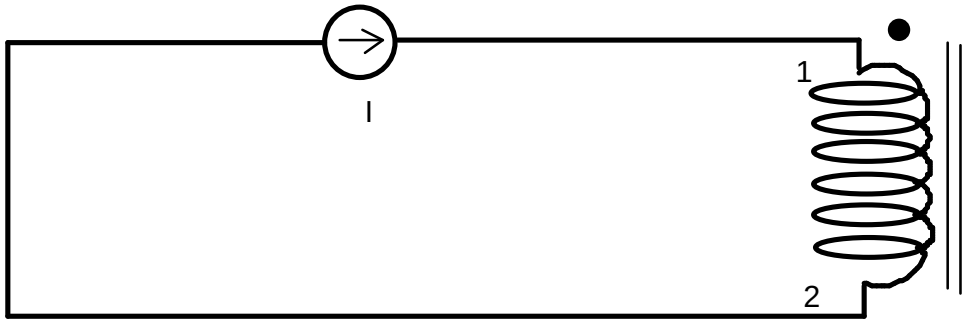


Figure 1. Continuity Monitor Circuit



I = 0.010 Adc

Figure 2. Burn-in Circuit

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Comments:
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